Erythromycin before endoscopy in upper GI bleeding: A meta-analysis of randomized controlled trials

Shoba Theivanayagam MD, Roxanne G. Lim MD, William J. Cobell MD, Jayashree T. Gowda, Michelle L. Matteson PhD, Abhishek Choudhary MD, Matthew L. Bechtold MD, FACG

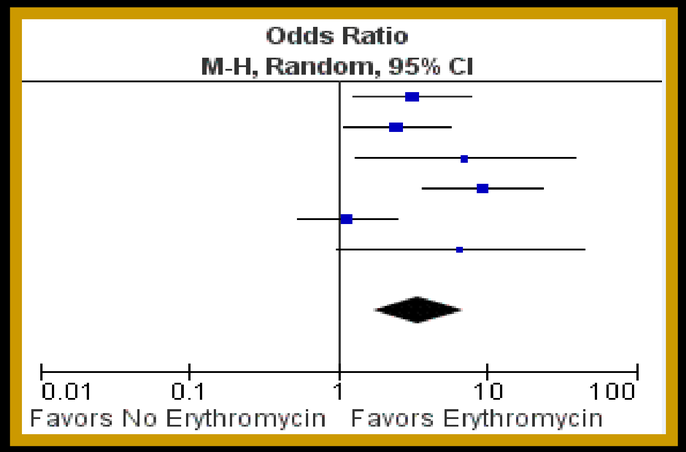
Division of Gastroenterology – Department of Internal Medicine
University of Missouri – Columbia

BACKGROUND

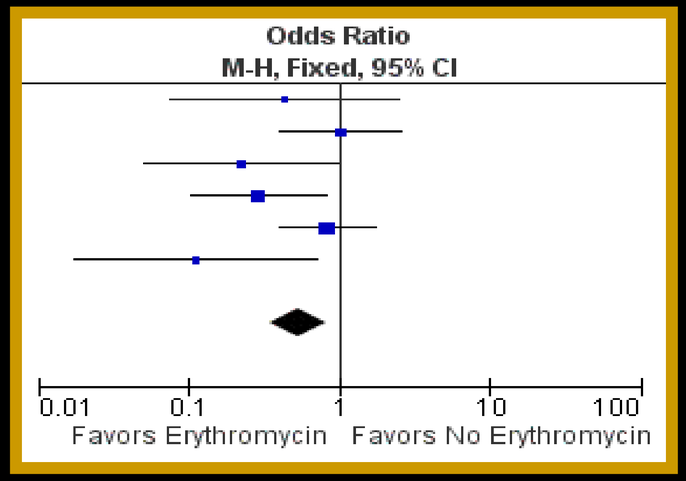
Upper gastrointestinal bleeding (UGIB) is a common medical emergency that accounts for numerous hospital admissions each year. Given its significant morbidity and mortality, urgent endoscopy with adequate gastric mucosal visualization is imperative for identification and treatment of bleeding lesions. Various studies have been done evaluating the effectiveness of erythromycin infusion prior to endoscopy to improve visibility and therapeutic potential of endoscopy; however, the results have been controversial. To evaluate further, we performed a meta-analysis comparing the efficacy of erythromycin infusion before endoscopy in acute UGIB.

METHODS

A comprehensive literature search was performed from multiple databases including PubMed, Cochrane, Medline, and recent abstracts from major conferences (DDW and ACG national meetings) until March 2012. Only randomized controlled trials were included in the analysis. Meta-analysis for the effect of erythromycin or no erythromycin before endoscopy in UGIB were analyzed by calculating pooled estimates of primary (visualization of gastric mucosa and need for second endoscopy) and secondary (units of blood transfused, length of hospital stay, duration of the procedure) outcomes. The results were reported using odds ratio (OR) and weighted mean difference (WMD). Statistical analysis was performed using RevMan 5.1.



Gastric visualization



Second look endoscopy

RESULTS

Six studies (N=528) met the inclusion criteria. Erythromycin infusion prior to endoscopy in upper GI bleed demonstrated a statistically significant improvement in visualization of the gastric mucosa (OR 3.49; 95% CI: 1.71 to7.09, $p<0.01$) compared to no erythromycin. In addition, erythromycin infusion before endoscopy resulted in a statistically significant decrease in the need for a second endoscopy (OR 0.53; 95% CI: 0.35 to 0.82, $p<0.01$), units of blood transfused (WMD -0.41; 95% CI: -0.82 to -0.01, $p=0.04$), and duration of hospital stay (WMD -1.51; 95% CI: -2.45 to -0.56, $p<0.01$). No statistically significant difference was noted for duration of procedure (WMD -1.36; 95% CI: -4.69 to 1.97; $p=0.42$).

CONCLUSION

Erythromycin infusion before endoscopy in patients with UGIB significantly improves visualization of gastric mucosa while decreases the need for a second endoscopy, units of blood transfused, and duration of hospital stay. Given the benefit in all primary and nearly all secondary outcomes, erythromycin should be strongly considered in patients presenting with UGIB prior to endoscopy.